

8 creating a temperature gradient with respect to the upper and lower surface of the substrate;  
9 emitting compounds in a gaseous form into the duct; and  
10 depositing the compounds on the substrate.

1 2. (Twice Amended) Process according to claim 1, further comprising;  
2 placing at least one heat shield around the first and second heater, the at least one heat  
3 shield being concentric with respect to the duct and situated outside the first and second heater.

1 3. (Twice Amended) Process according to claim 1, wherein the temperature gradient  
2 is perpendicular to the plane of the substrate and oriented in a first direction.

4. (Amended) Process according to claim 3, further comprising:  
reversing the first direction of the temperature gradient.

1 5. (Amended) Process according to claim 1, further comprising:  
2 creating a flow of a gas which is inert with respect to all materials included in a reactor and  
3 with respect to the material to be deposited and to the compounds in a gaseous form.

1 6. (Amended) Reactor for a chemical vapor deposition of layers of a material on a  
2 substrate which extends generally in a plane, comprising:  
3 a horizontal duct made of refractory material;  
4 independent first and second means for heating an upper wall and lower wall of the duct to  
5 a temperature substantially higher than ambient temperature, the first and second means for heating  
6 extending above and below the substrate, and outside the duct; and  
7 means to emit compounds in a gaseous form into the duct.

8 7. (Amended) Reactor according to claim 6, wherein the first and second means for  
9 heating include a resistive element.

1 8. (Twice Amended) Reactor according to claim 6, wherein the duct has a rectangular  
2 cross section and includes two plates forming a lower wall and an upper wall which are horizontal

3 and parallel to the plane of the substrate in a position that the substrate occupies during a  
4 deposition.

1 9. (Amended) Reactor according to claim 6, further comprising: at least one heat  
2 shield around the first and second means for heating.

1 10. (Amended) Reactor according to claim 9, wherein the duct, the first and second  
2 means for heating and the at least one heat shield are in a tube.

11. (Amended) Reactor according to claim 10, wherein the duct does not contact the  
tube.

1 12. (Twice Amended) Reactor according to claim 10, wherein the reactor is configured  
2 to pass the compounds in a gaseous form via an outlet of the duct between an internal space of the  
3 duct and a space lying between the duct and the tube, to balance a pressure on at least one wall of  
4 the duct.

1 13. (Amended) Reactor according to claim 12, wherein at least one wall of the duct has  
2 a thickness of less than or equal to one millimeter.

1 14. (Twice) Reactor according to claim 8, wherein the first and second means for  
2 heating include a graphite strip or band placed flat and parallel to the lower wall and upper wall of  
3 the duct, in a geometry so that, in a deposition zone, a deviation from the mean temperature on a  
4 surface of the substrate is less than 3°C.

1 15. (Twice Amended) Reactor according to claim 8, wherein the first and second  
2 means for heating are positioned, outside the duct at a distance of 1 to 3 mm from one of the lower  
3 wall or the upper wall.

1 16. (Twice Amended) Reactor according to claim 6, wherein the first and second  
2 means for heating may be raised to different temperatures.

1 17. (Twice Amended) Reactor according to claim 6, wherein the first and second  
2 means for heating form only a single heating device placed all around the duct.

1 18. (Twice Amended) Reactor according to claim 6, wherein the first and second  
2 means for heating are placed in a region of a deposition zone.

1 19. (Twice Amended) Reactor according to claim 6, wherein the means for heating is  
2 supplied with a voltage of less than or equal to 230 volts.

1 20. (Twice Amended) Reactor according to claim 6, wherein the duct is internally lined  
2 in a first portion with a secondary duct made of a refractory material.

1 21. (Twice Amended) Reactor according to claim 6, wherein the first and second  
2 means for heating are offset with respect to each other in a longitudinal direction of the duct.

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